

Journal Extracts: Task-Oriented Views of the Medical Literature

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INTRODUCTION

Researchers and medical publishers have designed a variety of document surrogates to aid physicians in using the primary literature. Journal editors implemented the structured abstract to facilitate peer review, electronic retrieval, and critical appraisal (1). Florance proposed clinical extracts to support using relevant articles for problem solving during patient care(2). Clinicians consult the literature for diverse activities in medical research and practice. A single summary, such as an abstract or clinical extract, may not be appropriate for all tasks. Furthermore, these overviews often lack the detail that is necessary to apply the findings of a clinical trial to the management of specific patients.

TASK-SPECIFIC EXTRACTS

We have developed alternative views of research articles to support five clinical tasks: browsing the literature, evaluating the reported research, matching patients with clinical studies, treating and counseling patients, and planning research. We call our views *extracts* because information that is relevant to a task is literally extracted from the original papers. For example, the extract for matching patients to clinical studies summarizes the eligibility criteria, exclusion criteria and setting. The extract for evaluating the quality of a clinical trial presents the design, study-group assignment, methods for obtaining consent, statistical analysis, and limitations (Figure 1). Information for a task may be scattered throughout an article. Task-specific extracts gather pertinent sentences from the text and form a concise summary.

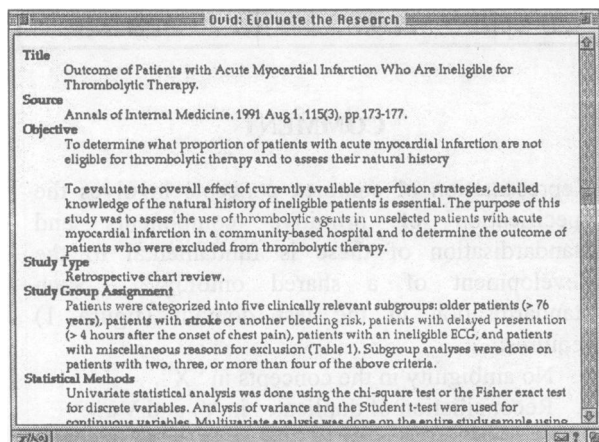


Figure 1. An "Evaluate the Research" extract.

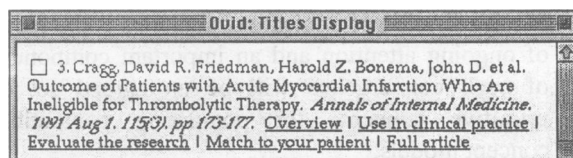


Figure 2. Titles display showing hypertext links to four extracts and the article full text.

IMPLEMENTATION

We have incorporated this extracting technique into an experimental text-retrieval system that uses Ovid Technologies' database and Web Gateway software (3). When an article is retrieved from a search, this system provides links to the four extracts that facilitate critical appraisal of the literature. Figure 2 illustrates a titles display with links to extracts.

Extracts are automatically generated using an explicit contextual structure that has been developed to improve the precision of searches in the medical literature (4). Each article is marked with a set of tags that delimit the semantic contexts in a document. For example, context tags identify the location of the statistical methods, even if the sentences that contain this information occur in disparate locations. We employ this contextual structure to index the document for searching and to create alternative views of the information. We construct extracts by drawing information from pertinent contexts.

We have created extracts for a collection of 500 articles from the internal medicine literature. We are currently designing a formal evaluation to assess the ability of these document surrogates to facilitate understanding and use of the medical literature.

References

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